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Epiphora as the primary initial presentation for a huge sino-nasal osteoma: A rare presentation.

Abstract - Sino-nasal osteoma is a common benign tumour of paranasal sinuses and usually asymptomatic. Here, we presented a case of a huge sino-nasal osteoma. Despite the large size of the tumour, the only presentation was epiphora. There were no headache, facial pain or diplopia. Nasal obstruction only occurred after involvement of the nasal cavity. In diagnosing aetiology of the epiphora, sino-nasal pathology needed to be ruled out after excluding ocular causes. Multidisciplinary approach between otolaryngology (ORL) team and ophthalmology team was essential in managing the case. The tumour was successfully removed surgically via endoscopic approach; and dacryocystorhinostomy (DCR) was performed to alleviate the epiphora.

Keywords - Epiphora, nasal osteoma, post saccal nasolacrimal duct obstruction

1 INTRODUCTION

Tumour causing nasolacrimal duct obstruction is a rare occurrence [1]. It usually originated from the lacrimal sac, nasolacrimal duct or other surrounding structures such as the paranasal sinuses. The obstruction normally results from tumourous compression or direct invasion of the tumour.

Osteoma is the most common benign tumour of the paranasal sinuses [2,3,4]. It is a slow growing tumour and usually asymptomatic. If symptomatic, patient typically complaints of facial pain, headache or nasal obstruction [4,5,6]. Nasal osteomas with orbital involvements are commonly presented as proptosis and diplopia [1,7]. Epiphora is an uncommon complaint [1].

Here we present a rare case of huge sino-nasal osteoma which manifested as epiphora as the primary initial symptom. This case highlighted the unusual presentation and the multidisciplinary approach in management of an unusual case of sino-nasal osteoma.

2 CASE REPORT

A 19-year old female, who is a slow learner, presented to our ophthalmology clinic with a history of left eye epiphora for 1 year duration. It had minimally affected her daily activities. There was no associated eye redness or reduced vision. No history of eye swelling or dacryocystitis were reported. The patient also denied any history of ocular or facial trauma.

On further enquiries, patient claimed of having intermittent left nasal blockage for 3 weeks. Otherwise, no anosmia, nasal discharge or epistaxis were noticed. Patient also denied having any ear symptoms, headache, facial pain or swelling.

Her visual acuity from the initial examination was good for both eyes (6/6). Optic nerve functions were normal with no relative afferent pupillary defect detected. Both eyes were orthophoric with normal full range of extraocular muscle movement and no diplopia. There was no obvious proptosis on both eyes. Examination on lacrimal sac area revealed no swelling, mass or abnormal skin changes. Intraocular examination was normal for both eyes. The intraocular pressure was within normal range. Schirmer test was normal. Fluorescein dye disappearance test was positive on the left eye. Lacrimal probing and irrigation performed on left eye showed hard stop with reflux of normal saline from lower punctum with no post nasal drip. Based on the history and examinations, patient was diagnosed with left eye epiphora secondary to post-saccal nasolacrimal duct obstruction.

Patient was then referred to otolaryngology (ORL) team to rule out any sino-nasal abnormality. Nasal endoscope by ORL team revealed whitish mass at middle meatus of the left nostril with smooth surface, benign looking, no pus discharge, not fungating or bleeding. A computed tomography (CT) scan of the orbit, paranasal sinuses and brain was

performed. It revealed left ethmoidal sinus lesion with extensions to the left nasal cavity, sphenoid sinus, lamina papyracea of left orbit (displacing left medial rectus and left optic nerve laterally) and floor of the anterior cranial fossa (Figure 1). The superior part of the lacrimal duct was obliterated (Figure 2). There was no intracranial extension detected.

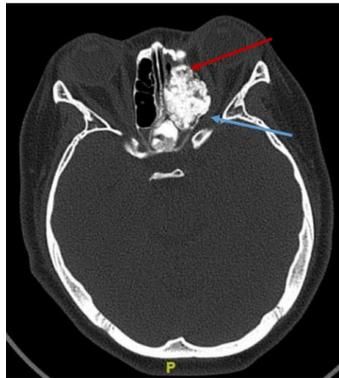


Figure 1: Plain CT scan of paranasal sinuses – axial section (globe level). Left ethmoidal lesion measured 6.0cm x 3.0cm x 4.5cm with invasion of surrounding structures. Here, left medial wall was involved (red arrow) leading to displacement of left medial rectus muscle and left optic nerve (blue arrow) with narrowing of orbital apex. There is also mild proptosis on the left eye.

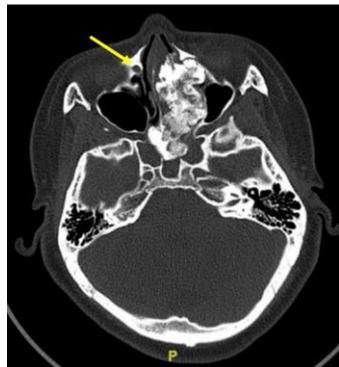


Figure 2: Plain CT scan of paranasal sinuses – axial section (maxillary level). Left ethmoid lesion with invasion of surrounding structures. The left lacrimal sac and nasolacrimal duct totally obliterated by the tumour, compared to right lacrimal drainage structures (yellow arrow).

Endoscopic biopsy of the mass in the left nasal cavity was then performed. Histopathological examination (HPE) revealed findings consistent with nasal osteoma but with no features of malignancy. Patient then underwent endoscopic excision of left osteoma and bilateral inferior turbinoplasty.

Four months after surgery, patient still complained of left epiphora and nasal blockage. There was intermittent epistaxis as well. Patient otherwise denied anosmia. There was no other ocular symptoms. Magnetic resonance imaging (MRI) of the paranasal sinuses and brain revealed left nasal lesion with extension into left frontal region, sphenoid sinus, and the left extraconal region. Based on imaging appearance, it was suggestive of aggressive osteogenic lesion.

In view of recent MRI findings, patient was subjected to another surgery. She underwent endoscopic de-bulking of the left nasal osteoma with posterior septotomy and left endoscopic dacryocystorhinostomy with Crawford tube intubation. HPE on the excised tissue reported as osteoma with no features of malignancy. Upon review in clinic one week after surgery, the patient claimed less epiphora of the left eye.

3 DISCUSSION

Nasal osteoma is the most common benign tumour of the paranasal sinuses. The incidence of nasal osteoma is only 0.6% of all benign tumours of the nose and usually found through coincidental radiographic investigations. It has a predilection for frontal and ethmoidal sinuses [1]. The tumour, although normally asymptomatic, can grow and become symptomatic. Initially, nasal osteoma takes the form of the paranasal sinus in which it originates; and with the increase in size, it invades the adjacent orbital and intracranial cavities.

In the present case, the tumour was large and invading the nasal cavity, sphenoid sinus and orbit. Theoretically, the patient should present with headache, facial pain, nasal obstruction or diplopia. Yet, she only complained of epiphora. The early involvement of lacrimal drainage system leads to obstruction of tear flow in the nasolacrimal duct. Therefore, patient complained of epiphora. Subsequently, patient also developed nasal obstruction.

Mansour et al. in 1999 [1] reported that secondary invasion of the orbit by osteoma was relatively uncommon, with an incidence of 0.9% to 5.1% of all orbital tumours. The ethmoidal osteoma commonly invaded the orbit first [8]. Here, the tumour extended to left extraconal region. Despite imaging data showing evidence of medial rectus displacement, the patient denied any symptom of diplopia. This was possibly because there was little restriction of

the left eye muscles' movement. Therefore patient did not experienced any double vision. In ethmoidal osteoma, diplopia usually develops due to displacement of the extraocular muscle rather than infiltration of the extraocular muscle by the tumour [8]. From the imaging too, there were left optic nerve displacement and narrowing of left orbital apex by the tumour. However, patient did not have signs of optic nerve compression or other cranial nerve abnormalities.

Fortunately in this case, patient presented relatively early as the epiphora started to bother her. Epiphora is a common ophthalmic complaint in eye clinic but the management is not always straightforward. The causes are multifactorial. In adult, it is commonly caused by lacrimal drainage obstruction [9,10]. The obstruction can occur at any the level such as at the punctum, canaliculi, lacrimal sac or nasolacrimal duct. In this case, we managed to locate the lesion in the post saccal region based from clinical evaluations alone. Therefore, good understanding of the causes the epiphora is important for diagnosis. It is also crucial to refer to ORL unit when ocular causes of epiphora had been ruled out. The nasal cavity and paranasal sinuses are situated adjacent to the eye. So any lesion originating from these sites can invade or compress on the ocular structure. In addition, any nasal pathology must be ruled out before dacryocystorhinostomy surgery; as it can lead to devastating effects such as seeding of the tumour and haemorrhage.

The role of imaging in diagnosis of epiphora is usually not indicated. However, it was essential in this case. It helped with the diagnosis and the planning of surgery. CT scan is the imaging modality of choice for the diagnosis of osteomas [8].

In general, most asymptomatic paranasal osteomas do not required surgical intervention. Observation with periodic re-evaluation is reasonable [3]. Surgical excision is usually necessary in symptomatic cases. In this case, the surgical intervention was done early as the tumour was large and to avoid further complications such as diplopia, optic nerve compression and intracranial extension. There were a few options for surgical approach depending on the size, location, extension of tumour and presence of complications. Here, our ORL team decided for endoscopic debulking surgery with endoscopic dacryocystorhinostomy. The endoscopic approach had given better

exposure, maintenance of the natural endonasal drainage pathways, lowering the amount of bleeding, reducing postoperative morbidity, shorter hospitalization time, and better cosmetic results [6].

4 CONCLUSION

This case highlights that ocular symptom such as epiphora can manifest as early presentation of a nasal pathology. Therefore, multidisciplinary approach with ORL team is important to rule out any sino-nasal pathology. Sino-nasal osteoma is a benign tumor but it can grows into huge size and invades other structures. Hence, early surgical intervention is crucial to prevent further complications.

CONFLICTS OF INTEREST

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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